poorly expresses to a clinician the basic injury and loss of function suffered by that heart. Doctor Kilgore has set forth in his paper the importance he attaches to a thorough search for the more hidden damage of this and many other similar injuries.

Next I find a great interest just now in the different ways in which an electrocardiogram may suggest to us that the patient has coronary disease, which is, of course, inseparably connected with myocardial disease. Kilgore mentions ventricular preponderance, bundle conduction deficiencies and deformed T waves. I have been following with great interest of late the contention of Herrick, Brooks, and others, that the too rapid lead-off of the down stroke of the R wave is of importance in this respect. So far I am impressed that it is of much importance. Necropsies on cases that have been thoroughly studied will eventually provide us an answer to this and many other important questions.

I wish to agree that oftentimes our complicated system of medical education does dwarf our true perspective of the art of medicine. It is many times true that the great clinician with a broad vision and ability to lead in the field of medicine often comes through his schooling with this faculty in spite of his training, not because of it. We may some day find a better system and curricula than we have at present.

❀

W. C. Smallwood, M. D. (817 Security Building, Long Beach).—Doctor Kilgore has properly emphasized the difficulties of assaying by definite rules the ability of the heart to withstand the strain of surgical operation.

Heart murmurs, in general, have again been cast in a rôle of minor importance, and justly so, for their significance in cardiac prognosis is still much exaggerated by the mass of the profession. Nevertheless the demonstration of a diastolic murmur is a matter of the first moment, calling clearly into mind the existence of definite pathology in which the heart's action as a whole is profoundly concerned. The mechanical disadvantage imposed on the heart by the lesions responsible for these murmurs is usually a considerable one; especially if unusual, sudden, or prolonged strain is to be encountered.

Aortic syphilitic disease, especially if untreated, is a dangerous handicap to a prospective surgical risk; much less dangerous is the well-compensated aortic insufficiency either of rheumatic or sclerotic origin. Mitral stenosis is always a lesion of gravity where surgery must be undertaken, but the risk varies greatly according to the implication and condition of the myocardium.

Patients with hypertension where the diastolic reading is 130 or more, especially if associated with definite renal changes as is most usual, are particularly bad risks and prone to develop sudden and often fatal attacks of pulmonary edema in the first forty-eight hours postoperative.

The electrocardiogram is of distinct value in assisting our judgments, but of the very greatest service in elderly people, where it may bring forth clear-cut evidence of intrinsic cardiac nerve damage, intrinsic cardiac circulatory damage, or marked muscle change, whereas ordinary examination might fail to disclose or barely hint the extent of this portentous pathology. Certainly the estimate of cardiac reserve power in degenerative heart disease is the most difficult problem with which we must deal. The quality of the heart sounds, the appreciation of which cannot be exactly conveyed in words, is of considerable importance to the trained observer. A shortened first sound, a flattening of its timbre, and a weakening or muffling at the apex, contrasted if need be with the first sound at the right sternal border, are not reassuring signs. Careful inquiry as to previous reactions to strain, especially the production of breathlessness on exeration or of pain, oppression, or constriction in the precordial region or areas of cardiac reference sensation, are danger signals never to be overlooked.

I have been surprised at the ease with which chronic fibrillators meet the strain of a necessary surgical operation. If the fibrillation is associated with mitral stenosis, however, the outlook is considerably more grave.

The dictum so clearly enunciated in this paper, that our estimation of the risk involved in a given case is to be based particularly upon the reserve power of the myocardium, is, I think, the fundamental criterion. This estimate can be approximated, often, unfortunately, with considerable inexactitude, only by a careful weighing of all the evidence at our command. It is in this weighing that experience and soundness of clinical judgment are so important. The whole problem is a difficult integration, and Doctor Kilgore's article is a most thoughtful analysis of its varied features.

THE LURE OF MEDICAL HISTORY

PHARMACY OF THE ANCIENT EGYPTIANS*

A Translation from the Esperanto

By J. Van Becelaere, M. D.
San Diego

IN studying pharmacy from the standpoint of concrete historical reliquiae we find a wealth of exact observation and cumulative experience, alongside of stark superstition and miracle-working practices. The history of pharmacy, in the form of documents that hark back to the mythical times of remotest antiquity, rightfully begins in Egypt, a country preserving earliest indications of civilization, culture, and art.

According to historiographers the first Egyptian dynasties date back sixty centuries before our era. Earliest medical writings recorded are of the same period.

The records concerning Egyptian pharmacy are preserved in the so-called "Hermetic books" of Thoth—the Egyptian Hermes—the discoverer of sciences and arts. Only six of these forty-two holy books are of medical import.

A second valuable source of information is found in the papyrus of Ebers, originating in Egypt, and preserved at the University of Leipzig.

The papyrus of Ebers consists of one hundred and ten pages, twenty-two lines to a page, and bears the superscription: "A Book for the Preparation of Medicines for All Parts of the Body." It is dated in the seventeenth century before our era. It prescribes remedies for external and internal diseases, together with formulated prayers and incantations. For example: "Let, therefore, Izodo heal me, as he healed Goro from his pains at the time Seto killed his father Osiris." This quotation refers to the victory of Goro over Seto—the victory of Good over Evil.

Egyptian medical practice was of two orders: (1) The Superior, or Magic, consisting of incantations, prayers for the removal of sortileges, and commentaries on oracles; and (2) the Customary Dogma, or common practice.

Magic Medicine.—This order of practice was the prerogative of the higher clergy, to whom alone was vouchsafed the privilege of studying

* Translated from "Internacia Medicina Revuo," November 1928, pp. 642-644.

the first thirty-six Hermetic books. For the healing of disease these priests enlisted the powers of the Dekans—aerial beings, demons that acted as intermediaries between the gods and mankind, and were endowed with the power of creating vegetables and animals. Thirty-six of these Dekans presided over thirty-six parts of the human body, life and health depending upon their benevolence. Hence there were special formulae for propitiating them, and thus the custom originated in Egypt that they had a special healer for each individual disease, since each part of the body, being subject to a different divinity, required for its healing in time of disease the intervention of a different priest.

Magic medicine, furthermore, was the recognized method of treatment in the holy temples of Izodo, where the sick received during their sleep—in the form of dreams and oracles—the revelation of remedies required for the cure of their condition. The priests of Izodo (Isis ?) invoked the healing forces of nature, which they enlisted by arousing a state of profound religious enthusiasm. Hence the essential agencies of a magic cure consisted of prayers and incantations.

Best known among divinities concerned with the healing of disease were Ptah, his son Hotep —the Egyptian Esculapius, and Thoth, mentioned above.

The clerical caste were held to a strict and ritualistic mode of living which prescribed moderation in all things, extreme cleanliness and bathing, both daily and nocturnal.

Severe hygienic precepts also ruled the entire population, which, in conjunction with excellent climatic conditions prevailing, made of the Egyptians the healthiest among ancient peoples. Thanks to their hygienic mode of living and their knowledge of medicine, the Egyptians came to be highly considered by outlanders, who rated every one of them as being a physician.

Both medicine and pharmacy stood in high regard in Egypt, their physicians practicing numerous specialties. Those concerned with the preparation of medicines were called "pastophoral." There also were "farmakopoloj" (according to the Greek nomenclature)—magicians dealing in secret preparations—and "farmakodikoj," who combined sortileges, incantations, with the use of healing remedies.

Common or Dogmatic Medicine.—This order of practice was in the hands of a lower caste of clergy who were allowed to study but the six last Hermetic books—"Embre"—and held to meticulous observance of the prescribed remedial directions. Noncompliance with the precepts therein contained, at times entailed capital punishment, though when a patient died after treatment strictly conforming with the regulations and directions of Embre, the misfortune entailed no consequences to the practitioner.

Ancient Egyptians were familiar with numerous medicinal products and their various forms of preparation. They regarded opium as a chief remedial agent, as also scilla, and that complex preparation called "Kyphi," a well-known fumigant prepared in form of aromatic globules.

Formulae for the preparation of fumigants were numerous. Among the best of these was rated a combination of dried-grape wine, galanga root, juniper berries, aromatic calamus, mastix, grapes, and honey.

Various animal and vegetable substances were in general use as medicines. For example, different grains used in bread making, fruit of the cedar, palm wine, beer, honey, vinegar, milk—both human and goat—human urine, the excrement of dogs, cats, lions and crocodiles, beef gall, the fat of all sorts of animals, lizards, for instance. The properties of bitter gall of fish and some of our own modern-day poisons, such as strychnia, were also known.

Among metallic medicines they sometimes employed cerussa—the basic carbonate of lead—as also the crystallized copper acetate.

Juice of the Corchorus anagallis—before it came into bloom—was used against the bite of serpents, different skin diseases, and corneal opacities. The juice of this plant was used to effect a dilatation of the pupil, and was recommended in various salves for the improvement of the eyesight.

Erysipelas was treated by frictions with urine of women, and the excrement of donkeys. Against a disease they called "avunes" poultices of ox and bird gall, and the tail of donkeys ground up, in oil, were recommended.

Prescriptions for fever, itch, and even for diseases of the spine were in vogue.

Medicines were exhibited in the form of ointments, plasters, washes for wounds, poultices, enemata, decoctions, and pills. Of pills the Ebers papyrus describes two sorts: those with honey, for women, and those without honey, for men.

During the preparation of medicines (which entailed the observance of meticulous directions) and also before their use, special forms of prayer were spoken.

Egyptians knew more than eighty different sorts of medicinal plants. Absinth, which was called "vulture's heart," was extensively cultivated, as were also Carthamus, Chelidonium, Coriander, Cyperus esculentus, Hyoscyamus, Strychnos, and Trifolium. Castor beans, which were called "neter kaka," and specimens of which have been discovered in sarcophagi dating from more than forty centuries before our era, were used internally by the Egyptians. Indigo was well known as a coloring material. From the poppy, opium was prepared; and the city of Syki, around which was conducted an intensive cultivation of the Papaver somniferum, was called "Mekone," the city of poppies. The Crocus orientalis was called "blood of Ares," and was held in high regard.

Egyptian pharmacy exerted a tremendous influence on that of the Greeks, in fact upon pharmaceutical practice of the entire world. However, from the time when Alexander of Macedonia

brought war to Egypt, and during the reign of the Ptolemies, ancient Egyptian pharmacy gradually gave way to the Greek practice, though for centuries thereafter the city of Alexandria remained a most important center of pharmaceutical development.

625 Broadway.

TRIBUTE TO DOCTOR JOHN F. BINNIE OF SAN DIEGO

CALIFORNIA BIOGRAPHICAL HISTORY

FROM the San Diego *Union* is taken the following:

"Eulogized by no less an authority than Dr. William J. Mayo, as a man who has given his country something more precious than life, Dr. John F. Binnie, noted surgeon whose health was broken in war work and who is an invalid at the naval hospital here, was honored by the California Medical Association at the general meeting of the fifty-eighth annual session at Hotel Coronado.

"The assemblage was a special one and was called the John F. Binnie meeting. Doctor Mayo presided and gave an address in honor of the great surgeon whose life work has been a beacon light to others in his profession. Doctor Binnie's accomplishments were sketched by Doctor Mayo, a fitting tribute by one great surgeon to another. Doctor Mayo said:

" 'It gives me great pleasure to take a part in this *Festschrifte* in honor of my old friend, Dr. John F. Binnie, whom I have known intimately, inside as well as outside, for more than a quarter of a century and of whose character and work I can speak from personal knowledge.

" 'John F. Binnie, born in Stirling, Scotland, the son of a Presbyterian minister, had the benefit of the virtues and economies of an austere religion when it was in its glory, but at a time when the kindliness and charity of the Man of Galilee, whom we all serve, had perhaps been forgotten.

" 'Doctor Binnie once told me, in a reminiscent mood, that he remembered as a small boy sitting in the church on the hard seats listening to almost endless discussion of doctrines, and hearing for the first time that Christ was a Jew. When he walked home with his father after the services, he said: "Father, I knew that God was a Presbyterian, but I didn't know that Christ was a Jew."

" 'The effect of that early religious education can be illustrated by a story that he told me when he returned from the war. He said that the division to which he was surgeon had three chaplains—a Presbyterian, a Methodist, and a Catholic—and that during the tragedies of the war these three men found themselves closely drawn together in their work among the wounded and the dying. When the war was over and they were to separate to go home, the Presbyterian minister, in bidding the others good-by, referred to their mutual work in the division and said: "Little did I think that the time would ever come that I should meet with a Methodist and with a Catholic on terms of equality, but we have been broadened and we all have been doing the Lord's work, you in your way and I in His way."

" 'I speak of these things because the qualities that have impressed me most in my association with Doctor Binnie have been his humor, his charity, his loyalty to his friends, and his tolerance.

" 'Doctor Binnie, educated in Aberdeen, came from the Scottish school of surgery which has always been recognized as the anatomical school, surgery based on anatomy. Nowhere in the world are finer surgical dissections made than in Scotland. France is the only country that has accomplished work in surgical anatomy at all comparable with that done in Scotland. The French have the intuition, the ready marshaling, almost subconsciously, of their knowledge, and the brilliant technique which produced a Pasteur. The German school of surgery is based on pathology, patient study of the minute, industry in gathering together the smallest facts, the school which produced a Virchow. England is distinguished by the school of clinical investigation, the school that produced Richard Bright, Thomas Addison, and Osler.

" 'John Hunter was a Scotsman trained in England, Lister an Englishman trained in Scotland. Each was an anatomically trained clinical investigator, and marked an epoch in the science and art of surgery.

" 'Doctor Binnie reads French and German, and has a working knowledge of the literature of Spain and Italy. He has traveled widely. He came to the United States at a fortunate time for us. His great worth as a surgeon and as a teacher was recognized by the American medical profession, and he aided the American school of surgery to become, in the best sense, cosmopolitan. He is an honored member of all the great surgical associations. His words in discussion always have been listened to with respect, and he is beloved personally by the practitioners of our art.

" 'As a writer Doctor Binnie is seen at his best in his many articles on surgery published in medical journals, and as the author of a great textbook on operative surgery. Written with the precision and clear understanding of Greig Smith (author of a textbook on abdominal surgery), with the judgment and surgical philosophy of Jacobson (author of a textbook on operative surgery), in his own inimitable style, Binnie's "Manual on Operative Surgery" has no equal in present-day literature. In it he has given only brief descriptions of the common operations such as may be found in any standard textbook, but for the proper surgical procedures in little known and rare diseases and conditions and their complications, one turns to Binnie's Operative Surgery with a confidence which is justified.

" 'When during the Great War the surgeon-general's office asked Doctor Binnie to go abroad to take charge of a surgical division which was having internal dissension and troubles, he went